

REMARKS

The Examiner rejected claims 1, 3 and 8 under 35 U.S.C. § 102(e) as allegedly being anticipated by Li (*Li et al.*, US 6,911,360).

The Examiner rejected claim 2 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Li in view of Lee (*Lee et al.*, US 5,917,244) and/or Kobayashi (US 5,083,183).

Applicants respectfully traverse the § 102(e) and §103(a) rejections with the following arguments.

35 U.S.C. § 102(c)

The Examiner rejected claims 1, 3 and 8 under 35 U.S.C. § 102(e) as allegedly being anticipated by Li (*Li et al.*, US 6,911,360).

Applicants respectfully contend that Li does not anticipate claim 1, because Li does not teach each and every feature of claim 1. For example, Li does not teach “the first contact region is **in direct physical contact with the liner region**” of claim 1 (bold emphasis added).

More specifically, in FIG. 3, Li teaches that the two contact regions 28 and 38 are **not in direct physical contact with the liner region 66** (a polysilicon layer). In contrast, in claim 1, the first contact region is **in direct physical contact with the liner region** (bold emphasis added).

Based on the preceding arguments, Applicants respectfully maintain that Li does not anticipate claim 1, and that claim 1 is in condition for allowance. Since claims 3 and 8 depend from claim 1, Applicants contend that claims 3 and 8 are likewise in condition for allowance.

35 U.S.C. § 103(a)

The Examiner rejected claim 2 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Li in view of Lee (Lee *et al.*, US 5,917,244) and/or Kobayashi (US 5,083,183). Since claim 2 depends from claim 1, which is in condition for allowance as argued above, Applicants contend that claim 2 is likewise in condition for allowance.

Moreover, Li in view of Lee and/or Kobayashi does not teach or suggest the feature “the electrically conducting region is **surrounded by the liner region**” of claim 2 (bold emphasis added).

More specifically, there is no motivation to modify Li by the teaching of Lee and/or Kobayashi in relation to the above quoted feature of claim 2. In FIG. 5, Lee forms the electrically conducting region 20a (a copper containing conductor layer) being surrounded by the liner regions 18a and 22a (nickel containing conductor layers) in order to “avoid interdiffusion of a copper containing conductor layer within the copper containing integrated circuit structure with integrated circuit layers adjoining the copper containing integrated circuit structure” (in Lee, column 3, lines 60-65). In contrast, in FIG. 3 of Li, there is no need to form the electrically conducting region 64 being surrounded by the liner region 66 as in Lee, because there is no interdiffusion between the electrically conducting region 64 (made of a silicide material) and the surrounding dielectric layer 78. As a result, the Examiner has not established suggestion, motivation, or teaching in Lee (or elsewhere in the prior art) in regard to the purpose of forming the electrically conductive region which is **surrounded by the liner region** in Li that would have led a person of ordinary skill in the art to combine Lee and/or Kobayashi with Li in a way

that would produce the claimed invention as claimed in claim 2. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness in relation to claim 2 (bold emphasis added).

Moreover, Li in view of Lee and/or Kobayashi does not teach or suggest the feature “both the electrically conducting region and the liner region are in direct physical contact with the second contact region” of claim 2 (bold emphasis added).


More specifically, there is no motivation to modify Li by the teaching of Lee and/or Kobayashi in relation to the above quoted feature of claim 2. Although, in FIG. 4, Kobayashi teaches that the contact region 18 is in direct physical contact with the liner region 14, there is no motivation to form the first contact region 28 being in direct physical contact with the underlying liner region 66 in FIG. 3 of Li. More specifically, in FIG. 3 of Li, the goal is to form the contact regions 28 and 38 being in direct physical contact with the electrically conducting region 64, so that the resistance of the electrically conducting region 64 can be tuned by the electromigration (Li, column 2, lines 14-20), therefore, there is no reason to perform further etching through the electrically conducting region 64 to form the contact regions 28 and 38 being in direct physical contact with the underlying liner region 66. As a result, the Examiner has not established suggestion, motivation, or teaching in Kobayashi (or elsewhere in the prior art) in regard to the purpose of forming the liner region which is in direct physical contact with the second contact region in Li that would have led a person of ordinary skill in the art to combine Kobayashi with Li in a way that would produce the claimed invention as claimed in claim 2. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness in relation to claim 2 (bold emphasis added).

Based on the preceding arguments, Applicants respectfully maintain that claim 2 is not unpatentable over Li in view of Lee and/or Kobayashi, and that claim 2 is in condition for allowance.

CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below. The Director is hereby authorized to charge and/or credit Deposit Account No. 09-0456.

Date: December 29, 2005


Khoi D. Nguyen
Registration No. 47,820

Schmeiser, Olsen & Watts
3 Lear Jet Lane, Suite 201
Latham, New York 12110
(518) 220-1850